

Serial No. 10/583,602
Amdt. dated May 20, 2010
Reply to Office Action of January 21, 2010

Docket No. K-0779

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A refrigerator comprising:

a body;

at least one storage chamber provided in the body and configured to store food;

a cool air generating device provided in the body and configured to generate a flow of cool air;

a cool air supplying device configured to circulate air between the at least one storage chamber and the cool air-generating device wherein the cool air supplying device includes ~~at least one~~ a first opening that discharges cool air into the at least one storage chamber in a first direction, and a second opening that discharges cool air into the at least one storage chamber in a second direction; and

a first separator provided adjacent to the ~~at least one~~ first opening and a second separator provided adjacent to the second opening, each separator configured to separate a flow of cool air in the cool air supplying device into at least two flows such that the cool air discharged from the

~~at least one~~first opening and the second opening into the storage chamber comprises a turbulent flow that is uniformly distributed through the storage chamber,

wherein the first and second openings are positioned such that the turbulent flow in the first direction is substantially perpendicular to the turbulent flow in the second direction, and wherein the turbulent flow in the first direction crosses the turbulent flow in the second direction inside the at least one storage chamber.

2. (Currently Amended) The refrigerator as claimed in claim 1, wherein ~~the~~each separator is configured to partially block the flow of cool air exiting from the cool air supplying device via ~~the at least one~~each corresponding opening.

3. (Currently Amended) The refrigerator as claimed in claim 1, wherein ~~the~~each separator extends in a direction that is substantially perpendicular to a flowing direction of the cool air.

4. (Currently Amended) The refrigerator as claimed in claim 1, wherein ~~the~~each separator causes the discharged cool air to form an oscillating flow.

5. (Currently Amended) The refrigerator as claimed in claim 1, wherein ~~the~~ each separator causes the flow of cool air in the cool air supplying device to form at least two vortices adjacent the at least one opening, and wherein the at least two vortices rotate opposite to one another.

6. (Previously Presented) The refrigerator as claimed in claim 5, wherein the vortices have a size and an intensity that are different and that continuously change.

7. (Currently Amended) The refrigerator as claimed in claim 1, wherein ~~the~~ each separator is configured to cause the separated two flows of the cool air to collide with each other before they are discharged into the storage chamber.

8. (Previously Presented) The refrigerator as claimed in claim 1, wherein the separated flows of the cool air collide with each other substantially head on.

9. (Previously Presented) The refrigerator as claimed in claim 1, wherein the separated flows of the cool air collide with each other at a predetermined angle.

10. (Currently Amended) The refrigerator as claimed in claim 1, wherein two opposite passages are formed between ~~the~~ each separator and ~~the at least one opening~~ each corresponding opening, and the separated flows of cool air flow along the two opposite passages.

11. (Currently Amended) The refrigerator as claimed in claim 1, wherein the separated two flows mix together after passing ~~the~~ each separator, and wherein ~~the at least one~~ each corresponding opening is positioned adjacent to a point where the separated flows of the cool air cross one another and mix together.

12. (Currently Amended) The refrigerator as claimed in claim 1, wherein a length of an interval between ~~the~~ each separator and ~~the at least one~~ each corresponding opening is less than or equal to a width of the opening.

13. (Currently Amended) The refrigerator as claimed in claim 1, wherein a length of an interval between ~~the~~ each separator and ~~the at least one~~ each corresponding opening is about 0.5 times of a width of the at least one opening.

14. (Currently Amended) The refrigerator as claimed in claim 1, wherein a width of ~~the each~~ separator is substantially equivalent to a width of ~~the at least one~~ each corresponding opening.

15 - 18. (Canceled).

19. (Currently Amended) The refrigerator as claimed in claim 1, wherein ~~the at least one each~~ opening includes:

a first inlet provided on a top wall of the storage chamber and configured, to discharge cool air toward a lower portion of the storage chamber; and

a second inlet provided on an upper sidewall of the storage chamber and configured to discharge the cool air toward an opposite sidewall of the storage chamber.

20. (Canceled)

21. (Currently Amended) The refrigerator as claimed in claim 19, wherein ~~the at least one each~~ opening further includes at least one outlet provided at a lower portion of the storage

chamber and configured to discharge cool air from within the storage chamber towards the cool air generating device.

22. (Previously Presented) The refrigerator as claimed in claim 21, wherein the at least one outlet comprises at least two outlets that are provided, respectively, on lower portions of opposite sidewalls of the storage chamber.

23. (Withdrawn) The refrigerator as claimed in claim 19, wherein the at least one opening further includes:

a third inlet provided at a lower portion of a sidewall of the storage chamber and configured to discharge the cool air towards the opposite sidewall; and

a fourth inlet provided on a bottom wall of the storage chamber and configured to discharge the cool air toward an upper portion of the storage chamber.

24. (Withdrawn) The refrigerator as claimed in claim 23, further comprising at least one outlet provided in approximately the center of a sidewall of the storage chamber and

configured to discharge cool air from within the storage chamber towards the cool air generating device.

25. (Previously Presented) The refrigerator as claimed in claim 1, wherein the cool air supplying device comprises an outlet configured to discharge cool air from the storage circulated in the freezing chamber to the cool air generating device.

26. (Previously Presented) The refrigerator as claimed in claim 25, wherein the outlet discharges the cool air from the storage chamber to an evaporator of the cool air generating device.

27. (Withdrawn) The refrigerator as claimed in claim 1, wherein the cool air supplying device further includes an auxiliary duct that is located adjacent to an evaporator of the cool air generating device, and that is configured to discharge cool air from the storage chamber directly towards the evaporator.

28. (Withdrawn) The refrigerator as claimed in claim 27, wherein a separator is

positioned adjacent to an opening of the auxiliary duct, and wherein the separator is configured to separate a flow of air in the auxiliary duct into at least two flows.

29. (Withdrawn) The refrigerator as claimed in claim 1, wherein the separator is formed of a flat member.

30. (Withdrawn) The refrigerator as claimed in claim 1, wherein the separator has an elongated rounded shape, wherein protruding ends of the separator extend in a flowing direction of the cool air.

31. (Withdrawn) The refrigerator as claimed in claim 1, wherein the separator is formed of an angularly bent shape, having protruding ends that extend in a flowing direction of the cool air.

32. (Withdrawn) The refrigerator as claimed in claim 1, wherein the separator is formed of an oval shape with both forward and rearward sides being rounded.

33. (Withdrawn) The refrigerator as claimed in claim 1, wherein a plurality of protrusions or dimples are formed on the surface of the separator.

34. (Currently Amended) The refrigerator as claimed in claim 1, wherein the cool air supplying device comprises at least one duct that passes between the cool air generating device and the ~~at least one opening~~ first and second openings, and wherein a diameter of the at least one duct expands toward the inside of the storage chamber.

35. (Currently Amended) The refrigerator as claimed in claim 34, wherein the at least one duct has an expanded portion that is adjacent to ~~the~~ each separator.

36. (Previously Presented) The refrigerator as claimed in claim 35, wherein a width of the expanded portion is about 2 to 2.5 times a width of the remaining portions of the at least one duct.

37. (Previously Presented) The refrigerator as claimed in claim 35, wherein a height of the expanded portion is about 1 to 1.2 times a width of the remaining portions of the at least one duct.

38. (Previously Presented) The refrigerator as claimed in claim 34, wherein the expanded portion of the at least one duct has a width that gradually expands.

39. (Withdrawn) The refrigerator as claimed in claim 38, wherein a sidewall of the expanded portion is inclined at a predetermined angle relative to a sidewall of an adjacent non-expanded portion of the at least one duct.

40. (Withdrawn) The refrigerator as claimed in claim 1, wherein a plurality of openings are provided with a corresponding plurality of separators, and wherein adjacent separators oscillate the discharged cool air in different directions.

41. (Withdrawn) The refrigerator as claimed in claim 1, wherein a plurality of openings are provided with a corresponding plurality of separators, and wherein adjacent

separators oscillate the discharged cool air in substantially perpendicular directions.

42. (Withdrawn) The refrigerator as claimed in claim 1, wherein a plurality of openings are provided with a corresponding plurality of separators, and wherein adjacent separators are configured to separate a flow of cool air into at least two flows that are directed in different directions.

43. (Withdrawn) The refrigerator as claimed in claim 1, wherein the separator further includes a pair of supports that extend from opposite sides of the separator near to the opening.

44. (Withdrawn) The refrigerator as claimed in claim 43, wherein a plurality of openings are provided with a corresponding plurality of separators, and wherein the respective pairs of supports of adjacent separators support different sides of the separators.

45. (Withdrawn) The refrigerator as claimed in claim 1, wherein a plurality of openings are provided with a corresponding plurality of separators, and wherein adjacent openings have different sizes.

46. (Currently Amended) The refrigerator as claimed in claim 28, wherein the at least two flows formed by the separator in the auxiliary duct mix back together before exiting the opening of the auxiliary duct to thereby form a turbulent flow of air exiting the opening of the auxiliary duct.

47. (New) A refrigerator comprising:

a body;

at least one storage chamber provided in the body and configured to store food;

a cool air generating device provided in the body and configured to generate a flow of cool air;

a cool air supplying device configured to circulate air between the at least one storage chamber and the cool air generating device wherein the cool air supplying device includes a first and second openings that discharges cool air into the at least one storage chamber; and

at least one first plate provided at a first predescribed distance from the first opening having a first predescribed width; and

at least one second plate provided at a second predescribed distance from the second opening having a second predescribed width, wherein

the at least one first and second plates are fixed in a permanent position and are not connected to each other, and wherein

the first predescribed distance of the at least one first plate from the first opening is less than or equal to the first predescribed width of the first opening and greater than one half of the first predescribed width of the first opening.

48. (New) 'The refrigerator of claim 47, wherein the second predescribed distance of the at least one second plate from the second opening is less than or equal to the second predescribed width of the second opening and greater than one half of the second predescribed width of the second opening.

49. (New) 'The refrigerator of claim 47, wherein at least one opening of the cool air supplying device includes a first opening and a second opening that discharges the turbulent flow into the at least one storage chamber in a first direction and a second direction, wherein the first and second openings are positioned such that the turbulent flow in the first direction is substantially perpendicular to the turbulent flow in the second direction, and wherein the

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turbulent flow in the first direction intersects the turbulent flow in the second direction inside
the at least one storage chamber.